1. A method of fabricating a top spin-valve giant magnetoresistive (GMR) read head with a novel conductive lead overlay configuration, comprising:

providing a substrate and a dielectric layer formed thereupon;

forming on the dielectric a first seed layer;

forming on the seed layer a ferromagnetic free layer;

forming on the ferromagnetic free layer a metallic, non-magnetic spacer layer;

forming on the spacer layer a synthetic antiferromagnetic pinned layer (SyAP), said formation further comprising the steps of:

forming a first ferromagnetic layer, AP1;

forming on said first ferromagnetic layer a metallic, non-magnetic coupling layer;

forming on the metallic, non-magnetic coupling layer a second ferromagnetic layer, AP2;

forming on said SyAP layer an antiferromagnetic pinning layer;

forming on the antiferromagnetic pinning layer a first capping layer, completing, thereby, a GMR top spin-valve SyAP sensor stack formation;

etching away a portion of the sensor stack formation to form, laterally disposed on either side of said sensor stack formation, contiguous junction surfaces for the formation of a longitudinal magnetic bias layer;

forming said magnetic bias layer contiguously with said junction surfaces;

forming on said magnetic bias layer a second capping layer, which will also serve as a first ion-beam etching mask;

forming symmetrically over a central portion of said sensor stack formation a single structure which will serve as both a second ion-beam etching mask and a lift-off stencil, the width of said structure corresponding approximately to a desired track-width of the read head;

ion-beam etching a region between said first ion-beam etching mask and said second ion-beam etching mask, said etching process removing a thickness of said sensor stack formation extending vertically downward from the first capping layer to a position approximately between said AP2 layer and said metallic, non-magnetic spacer layer formed on said ferromagnetic free layer;

forming, now using said second ion-beam etching mask as a lift-off stencil, a conducting lead layer overlaying said ion-beam etched region and said longitudinal magnetic bias layer;.

removing said second ion-beam etching mask and lift-off stencil.

2. The method of claim 1 wherein the substrate is a lower shield of a merged read-write head formation and said dielectric layer is the insulation layer between said lower shield and said read head.

3. The method of claim 1 wherein the first seed layer is a layer of GMR property enhancing material.

4. The method of claim 3 wherein the GMR property enhancing material is NiCr or NiFeCr formed to a thickness of between approximately 30 and 100 angstroms.

5. The method of claim 1 wherein the ferromagnetic free layer is a double layer comprising a layer of NiFe, formed to a thickness of between approximately 0 and 80 angstroms, on which is formed a layer of CoFe, to a thickness of between approximately-5 and 40 angstroms.

6. The method of claim 1 wherein the spacer layer of metallic, non-magnetic material is a layer of Cu and it is formed to a thickness of between approximately 15 and 30 angstroms.

7. The method of claim 1 wherein the first ferromagnetic layer, AP1, is a layer of ferromagnetic material chosen from the group of ferromagnetic materials consisting of CoFe, CoFeB, NiFe and CoFe/NiFe and it is formed to a thickness of between approximately 10 and 25 angstroms.

8. The method of claim 1 wherein the second ferromagnetic layer, AP1, is a layer of ferromagnetic material chosen from the group of ferromagnetic materials consisting of CoFe, CoFeB, NiFe and CoFe/NiFe and it is formed to a thickness of between approximately 10 and 25 angstroms.

9. The method of claim 1 wherein the metallic, non-magnetic coupling layer is a layer of metallic non-magnetic material chosen from the group consisting of Ru, Rh and Ir and it is formed to a thickness of between approximately 3 and 10 angstroms.

10. The method of claim 1 wherein the antiferromagnetic pinning layer is a layer of antiferromagnetic material chosen from the group consisting of MnPt, MnPdPt, NiMn, IrMn, NiO and FeMn and it is formed to a thickness of between approximately 50 and 200 angstroms.

11. The method of claim 1 wherein the first capping layer is a layer chosen from the group consisting of Ta, NiCr or NiFeCr and is formed to a thickness between approximately 20 and 40 angstroms..

12. The method of claim 1 wherein the second capping layer is a layer of Ta formed to a thickness of between approximately 100 and 120 angstroms.

13. The method of claim 1 wherein the process of etching the sensor stack formation to form contiguous junction surfaces is a process of ion-beam etching (IBE).

14. The method of claim 1 wherein the longitudinal magnetic bias layer is a layer of hard magnetic material, having a high magnetic coercivity and said layer is formed to a thickness of between approximately 100 and 500 angstroms and said layer is formed on a seed layer of thickness between approximately 30 angstroms and 100 angstroms.

15. The method of claim 14 wherein the hard magnetic material is ferromagnetic material chosen from the group of ferromagnetic materials consisting of CoCrPt, CoCrPtTa, CoCrTa, CoNiPt and CoPt..

16. The method of claim 14 wherein the seed layer is a layer of Ta/TiCr.

17. The method of claim 1 wherein the single structure which serves as a second ion-milling mask and a lift-off stencil is a double layer, comprising a layer of photoresist that is formed on a layer of PMGI, wherein said layer of PMGI is undercut relative to the layer of photoresist by a developing process.

18. The method of claim 17 wherein the width of said photoresist layer is between approximately 0.1 and 0.2 microns.

19. The method of claim 1 wherein the ion-milling is most advantageously done to reach the upper surface of the metallic, non-magnetic coupling layer within the SyAP layer.

20. The method of claim 1 wherein the conducting lead layer is a triple layer comprising a first layer of Ta, formed to a thickness of between approximately 20 and 60 angstroms, on which is formed a layer of Au, of thickness between approximately 100

and 500 angstroms, on which is formed a second layer of Ta, to a thickness of between approximately 20 and 60 angstroms.

21. The method of claim 1 wherein the conducting lead layer is a laminated layer comprising layers of conducting material chosen from the group consisting of Au, Ag, Ta, Rh, Ir, and Ru.

22. A top spin-valve giant magnetoresistive (GMR) SyAP read head having a novel conductive lead overlay configuration, comprising:

a substrate on which is formed a dielectric layer;

a seed layer formed on said dielectric layer;

a ferromagnetic free layer forming on the seed layer;

a metallic, non-magnetic spacer layer formed on the ferromagnetic free layer;

a synthetic antiferromagnetic pinned layer (SyAP) formed on the spacer layer, said layer further comprising:

a first ferromagnetic layer, AP1;

a metallic, non-magnetic coupling layer formed on said first ferromagnetic layer;

a second ferromagnetic layer, AP2, formed on the metallic, non-magnetic coupling layer;

an antiferromagnetic pinning layer formed on said SyAP layer;

a first capping layer formed on said antiferromagnetic pinning layer;

a longitudinal hard magnetic bias layer formed as a contiguous junction against a first side portion of said sensor element;

a conducting lead layer, formed overlaying said longitudinal hard magnetic bias layer and electrically contacting a second side portion of said sensor element.

23. The structure of claim 22 wherein the substrate is a lower shield of a merged read-write head formation and said dielectric layer is an insulation layer between said shield and said sensor element.

24. The structure of claim 22 wherein the seed layer is a layer of GMR property enhancing material.

25. The structure of claim 24 wherein the GMR property enhancing material is NiCr or NiFeCr formed to a thickness of between approximately 30 and 100 angstroms.

26. The structure of claim 22 wherein the ferromagnetic free layer is a double layer comprising a layer of NiFe, formed to a thickness of between approximately 0 and 80 angstroms, on which is formed a layer of CoFe, to a thickness of between approximately 5 and 40 angstroms.

27. The structure of claim 22 wherein the spacer layer of metallic, non-magnetic material is a layer of Cu and it is formed to a thickness of between approximately 15 and 30 angstroms

28. The structure of claim 22 wherein the first ferromagnetic layer, AP1, is a layer of ferromagnetic material chosen from the group of ferromagnetic materials consisting of CoFe, CoFeB, NiFe and CoFe/NiFe and it is formed to a thickness of between approximately 10 and 25 angstroms.

29. The structure of claim 22 wherein the second ferromagnetic layer, AP2, is a layer of ferromagnetic material chosen from the group of ferromagnetic materials consisting of CoFe, CoFeB, NiFe and CoFe/NiFe and it is formed to a thickness of between approximately 10 and 25 angstroms.

30. The structure of claim 22 wherein the metallic, non-magnetic coupling layer is a layer of metallic non-magnetic material chosen from the group consisting of Ru, Rh and Ir and it is formed to a thickness of between approximately 3 and 10 angstroms.

31. The structure of claim 22 wherein the antiferromagnetic pinning layer is a layer of antiferromagnetic material chosen from the group consisting of MnPt, MnPtPd, NiMn, IrMn, FeMn and NiO and it is formed to a thickness of between approximately 50 and 200 angstroms.

32. The structure of claim 22 wherein the capping layer is a layer chosen from the group consisting of Ta, NiCr or NiFeCr and is formed to a thickness between approximately 20 and 40 angstroms.

33. The structure of claim 22 wherein the longitudinal magnetic bias layer is a layer of hard magnetic material, having a high magnetic coercivity and said layer is formed to a thickness of between approximately 100 and 500 angstroms upon a seed layer of thickness between approximately 30 and 100 angstroms.

34. The structure of claim 33 wherein the hard magnetic material is ferromagnetic material chosen from the group of ferromagnetic materials consisting of CoCrPt, CoCrPtTa, CoNiPt, CoCrPt and CoCrTa and said seed layer is a layer of Ta/TiCr.

35. The structure of claim 22 wherein the first side portion extends from a position between said metallic non-magnetic coupling layer to said metallic, non-magnetic spacer layer and the substrate.

36. The structure of claim 22 wherein the conducting lead layer is a triple layer comprising a first layer of Ta, formed to a thickness of between approximately 20 and 60 angstroms on which is formed a layer of Au, of thickness between approximately 100 and 500 angstroms, on which is formed a second layer of Ta, to a thickness of between approximately 20 and 60 angstroms.

37. The structure of claim 22 wherein the conducting lead layer is a laminated layer comprising layers of conducting material chosen from the group consisting of Au, Ag, Ta, Rh, Ir, and Ru.

38. The structure of claim 22 wherein said second side portion extends from the capping layer to the upper surface of the longitudinal magnetic bias layer.